



SUPPORTING INTERNATIONAL GLOBAL CHANGE SCIENCE

As directed by the Global Change Research Act, USGCRP works to improve coordination of U.S. activities with the programs of other nations and international organizations in order to promote international cooperation on global change research and build global change research capacity in developing countries. USGCRP advances these goals by developing international partnerships that (1) advance the priorities and objectives of the USGCRP community, (2) effectively link to USGCRP's program areas, and (3) leverage existing agency investments and resources. The partnerships and related activities highlighted this year support partner activities that align with USGCRP's strategic goals and help to maintain U.S. influence and leadership in the international research community.

HIGHLIGHT 19

Developing international support for research on climate, environment, and human health

USGCRP co-led an international group of funders and implementers in initiating development of a collaborative research action.

The **Belmont Forum** is an international partnership between national research funding agencies and international science organizations focused on advancing transdisciplinary global change science and accelerating its application. Its Collaborative Research Actions (CRAs) combine natural science, social science, and stakeholder perspectives to produce knowledge for understanding and responding to global environmental change. In November 2017, the Belmont Forum approved a proposed CRA focused on the linkages among climate, environment, and health. An international steering group, co-led by representatives from USGCRP member agencies (including NOAA, NIH, and NSF), was formed to develop the initial proposal into a final CRA and to organize a scoping workshop, hosted by USGCRP in April 2018. USGCRP's engagement with the Belmont Forum is coordinated through the International Activities Interagency Working Group (IAIWG). The Program's inputs into the scoping process for the Climate, Environment, and Health CRA took place through an interagency consultative process managed by the Interagency Cross-cutting Group on Climate Change and Human Health (CCHHG).

The scoping workshop brought together a diverse group of international funding organizations and Federal agencies including NIH, NOAA, NSF, USGS, USDA, NASA, and USAID, with the goal of developing a shared set of funding priorities for the Climate, Environment, and Health CRA. Steering group discussions and the scoping workshop identified a number of interconnected research priorities that reflect a "systems" approach, including climate change and health; disasters, extreme weather, and climate events; heat and health; oceans and health; and climate-sensitive infectious diseases and land use change. Following input and deliberations at the workshop, the steering committee developed a roadmap for a multi-year international call for proposals to begin in 2019. This CRA aims to fund research that will advance understanding of risks and vulnerabilities across multiple time scales; develop robust modeling, prediction, and early warning systems for climate-related health threats; and provide information useful to decision makers.

HIGHLIGHT 20

Promoting international research on global change

USGCRP efforts support building global change research capacity in developing countries.

USGCRP provides support to help sustain the core operations of three international science organizations: the **World Climate Research Program (WCRP)**, which is the primary coordination mechanism for international research on the climate system; **System for Analysis, Research and Training (START)**, which provides opportunities for research, education, and training to scientists, policymakers, and practitioners in developing countries; and **Future Earth**, which builds interdisciplinary, cross-sectoral relationships to advance global sustainability science. Through NSF, USGCRP provides a U.S. contribution to these collaborators to help advance the fundamental understanding of the natural and human components of the Earth system, thereby extending the reach of USGCRP's own programs in observations, process research and modeling. With USGCRP's support, these collaborators also organize conferences, workshops, and

trainings for scientists and policy makers from around the world, including those in their early career stages, in accordance with USGCRP's mandate under the Global Change Research Act to assist in building global change research capacity in the developing world.

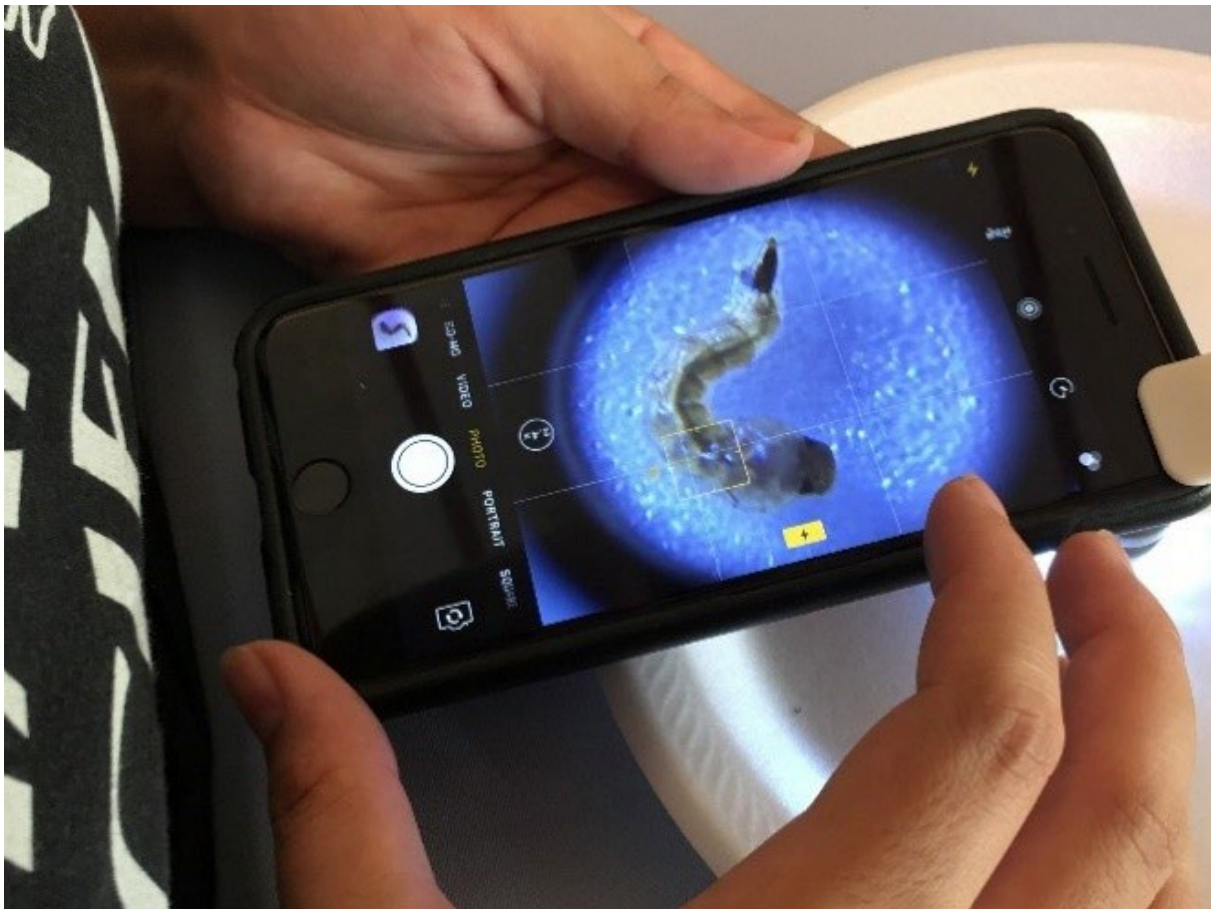
HIGHLIGHT 21

Supporting responses to climate-sensitive diseases

Interagency efforts are engaging citizens in forecasting and observation of mosquito threats.

Global Learning and Observations to Benefit the Environment (GLOBE) is an international science and education program that provides students and the public worldwide with the opportunity to participate in data collection and the scientific process and contribute meaningfully to our understanding of the Earth system and global environment. In 2017, the U.S. Department of State (DOS) partnered with NASA to leverage GLOBE in engaging hard-to-reach populations in targeted Zika-affected countries to better track and control mosquitoes, combat Zika transmission, eliminate breeding sites, and make crowd-sourced data available to global partners. GLOBE program participants use a mobile phone app, low-cost lens attachments, and the scientific training they

receive in the program to identify the types of mosquitoes in their communities, safely collect samples, and upload photos and data via a global map tracker to a centralized NASA database. The project currently runs through September 2019 and aims to build sustainable networks of schools, organizations, and public health officials in each Zika-affected region to improve disease tracking and control in focus countries and make the crowdsourced data available for use by international partners.



A participant using the GLOBE Observer app on their mobile device examines a magnified mosquito larva to determine if it is a disease-carrying species. Source: Department of State.